Amendments to the Claims

1. (currently amended) A method comprising:

a) applying a die attach adhesive composition to a substrate,

b) curing the die attach adhesive composition to form a die attach adhesive,

c) plasma treating a surface of the die attach adhesive,

d) plasma treating a surface of a semiconductor die,

e) contacting the plasma treated surface of the semiconductor die with the plasma treated surface of the die attach adhesive,

f) wire bonding the semiconductor die to the substrate,

g) injection molding a silicone composition over the product of step f), where the silicone composition fills voids in the wire bonded semiconductor die and forms a hermetic seal over the substrate, thereby protecting it from environmental exposure, and

optionally h) forming solder balls on a surface of the substrate opposite the die attach adhesive;

where step g) comprises:

i) placing the product of step e) or the product of step f) in an open mold,

ii) closing the mold to form a mold cavity,

iii) heating the mold cavity,

iv) injection molding a curable liquid into the mold cavity to overmold the semiconductor die on the substrate,

v) opening the mold and removing the product of step iv), and

optionally vi) post-curing the product of step v).

2. (original) The method of claim 1, where the die attach adhesive comprises a silicone die attach adhesive.

3. (canceled)

4. (previously presented) The method of claim 1, where the silicone composition cures to form an over mold having a modulus of 25 to 1,000 megaPascals, and where the silicone composition has a viscosity of 80 to 3000 Poise and a curing profile such that the silicone composition cures in 30 to 120 seconds at a temperature of 80 to 240 °C.

5. (canceled)

6. (canceled)

7. (currently amended) A method comprising:
i) placing a semiconductor device in an open mold,
ii) closing the mold to form a mold cavity by applying a clamping force of 1 to 80 tonnes,
iii) heating the mold cavity,
iv) injection molding a curable liquid comprising a silicone composition into the mold cavity to overmold the semiconductor device, wherein step iv) is carried out at an injection speed sufficient to provide a pressure in the mold cavity ranging from 0.3 to 7 megaPascals,
v) opening the mold and removing the product of step iv), and
optionally vi) post-curing the product of step v);
with the provisos that the silicone composition has a viscosity of 80 to 3000 Poise, and a cured product of the silicone composition has a modulus of 100 to 1,000 megaPascals.

8. (original) The method of claim 7, where the semiconductor device comprises a substrate, a die attach adhesive, and an integrated circuit, wherein the integrated circuit is attached to a surface of the substrate through the die attach adhesive, and where the integrated circuit is wire bonded to the surface of the substrate.

9. (original) The method of claim 7, where step ii) is carried out by applying a clamping force of 1 to 27 tons.

10. (previously presented) The method of claim 7, where the silicone composition forms an optically clear material upon cure.

11. (original) The method of claim 7, where step iii) is performed at a temperature of 80 to 180 °C.

12. (original) The method of claim 7, wherein step iv) is carried out at an injection speed sufficient to provide a pressure of 0.6 to 2.0 MPa force in the mold cavity.

13. (canceled)

14. (canceled)

15. (previously presented) A method comprising:

a) applying a die attach adhesive composition to a substrate,

b) attaching a semiconductor die to the die attach adhesive composition,

c) curing the die attach adhesive composition to form a die attach adhesive,

optionally d) wire bonding the semiconductor die to the substrate, and

e) injection molding a curable liquid over the semiconductor device formed as the product of step c) or step d), wherein injection molding is carried out by a method comprising

i) placing the semiconductor device in an open mold,

ii) closing the mold to form a mold cavity by applying a clamping force of 1 to 80 tonnes,

iii) heating the mold cavity,

iv) injection molding a curable liquid into the mold cavity to overmold the semiconductor device, wherein step iv) is carried out at an injection speed sufficient to provide a pressure in the mold cavity ranging from 0.3 to 7 megaPascals,

v) opening the mold and removing the product of step iv), and

optionally vi) post-curing the product of step v);

with the provisos that the curable liquid has a viscosity of 80 to 3000 Poise, and a cured product has a modulus of 100 to 1,000 megaPascals.

16. (previously presented) A method comprising:

a) attaching a semiconductor die to a substrate to form a semiconductor device, and

b) injection molding a curable liquid over the semiconductor device by a method comprising

i) placing the semiconductor device in an open mold,

ii) closing the mold to form a mold cavity by applying a clamping force of 1 to 80 tonnes,

iii) heating the mold cavity,

iv) injection molding a curable liquid comprising a silicone composition into the mold cavity to overmold the semiconductor device, wherein step iv) is carried out at an injection speed sufficient to provide a pressure in the mold cavity ranging from 0.3 to 7 megaPascals,

v) opening the mold and removing the product of step iv), and

optionally vi) post-curing the product of step v);

with the provisos that the silicone composition has a viscosity of 80 to 3000 Poise, and a cured product of the silicone composition has a modulus of 100 to 1,000 megaPascals.